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# Mineral Economies – Indebtedness Without Growth

by Susanne Schattner, Hamburg\*

**Developing countries with considerable mineral reserves might be expected to have fewer problems with debt-servicing than other developing countries lacking these resources. In fact, during the past decade a not insignificant number of the former had to apply for a rescheduling of their foreign debts. What are the reasons behind this unexpected development?**

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International banks as well as public lenders have, over the past decade, suffered some disappointments with regard to countries whose mining production accounts for a high proportion of their gross domestic product as well as their exports, thus making mining the key sector of their economies. These countries play a significant part in supplying the world economy with minerals. Some of these mineral-exporting countries<sup>1</sup> defaulted on their foreign debt and had to apply for a rescheduling in the Paris Club<sup>2</sup>; in the case of others the servicing of their loans was seriously threatened, at least temporarily. Following Chile's negotiations on its foreign credits, as early as 1974, debt rescheduling by the mineral economies became frequent towards the end of the decade. Of the 13 countries six were obliged, during the past decade, to apply for multilateral regulation of their public and publicly guaranteed private debts, and two more conducted negotiations over their private indebtedness<sup>3</sup>. Thus, of the 21 countries in respect of which debt rescheduling negotiations have been confirmed during the 1970s, eight come under the heading of mineral economies<sup>4</sup>.

However, even countries which have not so far lodged an application in Paris have encountered difficulties in meeting their contractual payment obligations. Zambia<sup>5</sup>, for example, following delays in payment in 1978 only avoided a multilateral rescheduling of its debts by means of an IMF stand-by

credit, and Mauretania<sup>6</sup> and Morocco<sup>7</sup> likewise had to resort to stand-by credits in order to solve their balance-of-payments problems. Most recently Guyana<sup>8</sup> has been facing considerable balance-of-payments problems which induced President Burnham to declare that his country was on the verge of bankruptcy. A special case is that of Guinea<sup>9</sup> which raised a large part

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<sup>1</sup> "Mineral economies" for the purpose of this article are countries whose mineral exports exceed 40 % (1978) of their exports or whose mining sector accounts for more than 5 % (1970-77) of the gross domestic product. Oil-producing countries are excepted because they were subject to specific developments. The group of the "mineral economies" thus includes 13 countries: Lower-income class (under 370 \$ per capita): Guinea, Mauretania, Sierra Leone, Togo, Zaire. Middle-income class (over 370 \$ per capita): Bolivia, Chile, Guyana, Jamaica, Liberia, Morocco, Peru, Zambia. A World Bank study limits the group of non-fuel mineral economies to the same countries. Cf. Gobind N a n k a n i : Development Problems of Mineral-Exporting Countries, in: World Bank Staff Working Paper No. 354, Washington 1979.

<sup>2</sup> Ad-hoc meetings of creditor and debtor countries are held within the framework of the Paris Club for renegotiation of public and publicly guaranteed foreign debts.

<sup>3</sup> Chile (1974, 1975), Bolivia (1981), Jamaica (1981), Liberia (1980), Peru (1978), Sierra Leone (1977, 1980), Togo (1979, 1980), Zaire (1976, 1977, 1979, 1981). Cf. OECD: External Debt of Developing Countries, Paris 1981, Table 12.

<sup>4</sup> Cf. OECD, loc. cit.

<sup>5</sup> Cf. Sambia in Zahlungsverzug (Zambia behind with Payments), in: Blick durch die Wirtschaft, 21. 2. 1978; Sambia, IWF-Kredit (Zambia, IMF Credit), in: Nachrichten für Außenhandel, 21. 3. 1978.

<sup>6</sup> Cf. Mauretania: Stand-by Arrangement, in: International Monetary Fund: IMF Survey, 4. 8. 1980.

<sup>7</sup> Cf. Marokko, IWF-Kredit bewilligt (Morocco, IMF Credit Granted), in: Nachrichten für Außenhandel, 28. 4. 1982.

<sup>8</sup> Cf. Guyana meldet Bankrott an (Guyana Declares Bankruptcy), in: Handelsblatt, 27. 4. 1982.

<sup>9</sup> Cf. Lähmende Oststaaten-Verschuldung Guineas (Guinea's Crippling Debts to the Eastern States), in: Nachrichten für Außenhandel, 18. 11. 1980.

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of its credits from the Comecon countries. Repayments were made in the form of exports below world market prices on a barter basis. This procedure gives the lenders less cause to agree to debt rescheduling as long as they require the exports.

### High Indebtedness

In view of this accumulation of payment delays and debt rescheduling the question is posed as to the extent to which these countries differ from other developing countries in terms of level and trend of foreign debt. Altogether, the public and publicly guaranteed foreign debt<sup>10</sup> of the mineral economies rose within a decade from US \$ 5.8 billion (1970) to US \$ 28.5 billion (1979)<sup>11</sup>. If one includes non-guaranteed private credits, the total foreign debt of these countries probably reached an even greater volume. At the same time, borrowing by the mineral economies did not increase any faster than borrowing by other developing countries.

It is, however, interesting to examine the situation in terms of per capita income. The "minerals" in the group of low-income countries increased their foreign debts distinctly more rapidly than the "non-minerals". Private lenders, in particular, engaged themselves to a far greater degree in some of the "minerals", such as Togo, Sierra Leone or Zaire, than in other countries with comparable per capita income. On the other hand, within the total debt of the middle-income countries the

share of the "minerals" has diminished. This trend is, however, due to the marked increase in the indebtedness of a number of newly industrialising countries (Brazil, Korea and Mexico).

The considerable extent to which the mineral-exporting countries have incurred foreign debt may be assessed by relating total borrowing to a country's economic strength in the shape of its gross national product. Measured against this indicator the mineral economies in both income groups in 1979 recorded an above-average total indebtedness (cf. Table 1). In 1970 the ratio of foreign debt to gross national product for the mineral-exporting countries was still below the average of their respective country-groups. This means that the bulk of foreign debt has been incurred over the past ten years.

It might be expected that the mineral-exporting countries would be less deeply indebted in relation to their export earnings than non-mineral economies which have not, up to now, built up production capacities for tradable goods. However, the ratio of total debt to exports similarly shows that the "minerals" are more heavily in debt than other countries with a comparable per capita income.

These ratios do not suggest that the mineral-exporting countries must necessarily run into problems with servicing their loans. Other countries with similar ratios have succeeded in avoiding multilateral debt rescheduling and in pursuing successful debt-incurring processes. What these indicators reveal is that countries with exportable resources are inclined to believe that they can afford foreign credits and that lenders will be more ready to grant a large amount of

**Table 1**  
**Comparative Indicators**  
(Percentages)

|                                                                         | Low-Income Countries<br>(under \$ 370 per capita income) |         | Middle-Income Countries<br>(over \$ 370 per capita income) |                      |
|-------------------------------------------------------------------------|----------------------------------------------------------|---------|------------------------------------------------------------|----------------------|
|                                                                         | Non-mineral                                              | Mineral | Non-mineral                                                | Mineral <sup>a</sup> |
| Growth rate: of GDP (1970-79)                                           | 3.4                                                      | 2.0     | 5.6                                                        | 2.7                  |
| of agriculture (1970-79)                                                | 1.8                                                      | 0.6     | 2.4                                                        | 2.1                  |
| Proportion of GDP: manufacturing industry (1979)                        | 10.0                                                     | 5.8     | 19.0                                                       | 16.7                 |
| agriculture (1979)                                                      | 43.9                                                     | 32.4    | 19.7                                                       | 15.9                 |
| Agricultural workforce as a proportion<br>of the total workforce (1979) | 77.7                                                     | 75.2    | 42.2                                                       | 46.0                 |
| Illiteracy rate (1976)                                                  | 60.5                                                     | 82.5    | 32.0                                                       | 52.0                 |
| Export ratio (1979)                                                     | 16.6                                                     | 29.6    | 27.7                                                       | 33.1                 |
| Debt/GNP (1979)                                                         | 23.1                                                     | 72.1    | 25.4                                                       | 42.0                 |
| Growth rate of foreign indebtedness (1970-79)                           | 13.8                                                     | 27.1    | 24.3                                                       | 17.8                 |

<sup>a</sup> Except Guyana

Source: Calculated from World Bank: World Development Report 1981, Washington 1981.

All figures are unweighted averages for the group of countries concerned. The growth rate of foreign indebtedness refers to the overall total for the group of countries concerned.

foreign credits to the mineral economies. Private lenders actually believed that the mineral-exporting countries had a high debt-servicing capacity even when, judging by their level of development, they seemed better suited to receive development aid, or at least credits on concessional terms.

The creditworthiness of mineral-exporting countries appears, rather – in the view of private banking circles – to be correlated to the short-term price fluctuations of their principal export product. A striking example is the extensive granting of credits to such copper countries as Chile, Peru and Zaire during the copper price boom of 1972 to 1974.

What international banks expect from mineral-exporting countries is shown clearly by a statement by the former Vice-President of the US Export-Import Bank<sup>12</sup>: "To be commercially creditworthy, a country should be in a position to balance its current account within the time frame of the loan, i. e. five to seven years for typical bank loan maturities. This is not to say that the current account will be balanced in that time frame, but the potential for eventual balance must be visible."

The large amounts of credit granted to the mineral-exporting countries show that the availability of exportable resources is evidently regarded as in itself a sufficient basis for balancing the current account. The mineral-exporting countries did, in fact, have available to themselves, in the past, a larger volume of foreign currency than other economies, as may be seen from the export ratio alone, which is higher on average for these countries than for other developing countries. Thus the mineral-exporting countries were thought to be more readily capable of coping with the transfer of the costs of foreign capital by activating their current account than were other developing countries.

During the past decade the mineral economies were unable to utilise this capacity in the manner assumed. Their current accounts remained in deficit. The transfer of interest, let alone of the full debt service, which had been expected by the creditors, proved impossible.

### Criteria for Debt-Servicing Capacity

This development shows that availability of exportable resources alone does not determine a country's capacity for successfully pursuing debt-incurring processes. The international banks should be reminded that they do not, after all, grant loans to enterprises merely because they have one competitive

product to show in their production programme. They expect instead that the credits are used for investments designed to enable the enterprise as a whole to earn an additional revenue sufficient to ensure the servicing of the interest. The investments of a national economy, too, must be efficient and yield an increase in output, i. e. the gross domestic product must grow. A sufficient growth of domestic product can fail to materialise if foreign capital employed on profitable projects releases domestic capital for unproductive purposes, or if all investments are concentrated on one sector only while other productive ones are neglected. Growth should be assumed to be sufficient if the return on capital input (here, additional output) exceeds the cost of foreign finance.

A second condition for a successful debt-incurring process is the transformation of foreign capital funds into investments and not into consumption. If foreign loans are consumed, either wholly or partially, then no yield, or only an insufficient one, can be earned for servicing interest.

The pre-condition that the yield of the investments must accrue in foreign currency in order to ensure the transfer of the capital costs becomes relevant only in the long term. After all, a debtor-country which so improves the quality of its economy that productivity for additional capital remains high is in a position to finance both amortisation and interest payments by means of new credits until eventually a competitive import-substitution or export industry makes possible a surplus on the current account<sup>13</sup>.

### The Criterion of Efficiency

A successful debt-incurring process, therefore, is ensured primarily if the foreign capital is employed efficiently. Comparison of the average growth rate of the gross domestic product of the "minerals" with that of other countries in the same income group immediately shows that the mineral-exporting countries, in spite of higher indebtedness, recorded a lesser economic success. The mineral economies in the group of low-income countries on average only achieved a growth of 2 % over the years 1970 to 1979, while the other countries of this group recorded 3.4 %. The mineral economies in the middle-income group of countries likewise grew more slowly than the non-mineral economies (cf. Table 1).

<sup>12</sup> Cf. David O. Beim: Rescuing the LDCs, in: Foreign Affairs, Vol. 55, No. 4, July 1977, p. 720.

<sup>13</sup> Cf. Armin Gutowski: Foreign Indebtedness and Economic Growth: Is there a Limit to Foreign Financing? Paper prepared for the Conference of the International Economic Association on Financing Problems of Developing Countries, Buenos Aires, October 26-30, 1981, unpublished manuscript.

Comparison of additional capital accumulation with the additional product provides further leads for assessing the criterion of efficiency. Here the African countries – with the exception of Morocco – with investment ratios of approximately 30 % exhibit a considerable growth of capital stock. These, however, are matched by only slight growth rates. These countries show a marginal productivity of capital of below 10 %<sup>14</sup>. Developments in the South American countries and in Morocco differ markedly from this. These countries – with the exception of Jamaica – recorded considerably higher capital productivity<sup>15</sup> (cf. Table 2).

If one examines the trend of capital productivity over the course of time, a diminishing trend is observed even in the group of countries with, on average, high capital productivity. The exception here is Chile, which has succeeded, following its debt crisis of 1974/75, in carrying through structural adjustments in the shape of massive currency devaluations, a restriction of government expenditure and a raising of the investment and savings ratio, and in improving the efficiency with

which capital was used<sup>16</sup>. In the more recent past Chile, however, failed to adjust the exchange rate to the lowered – though not low – rate of inflation. This may jeopardize its debt-servicing capacity, the more so as Chile has to generate a high additional product to meet the interest rate of 15.4 % p. a. on foreign debt which is far above average.

However, the empirical figures for capital productivity alone are not sufficient to form a definitive judgement on the efficiency of the use of capital. Only when other factors affecting capital productivity are taken into account can developments during the seventies be adequately interpreted. A mere comparison with the average performance of other countries in the same income group in 1979 indicates that the mineral-exporting countries, with the exception of Chile and Jamaica, are on a very low level of development with regard to the quality of the labour force and the structure of the economy.

The varying efficiency of the use of capital within the group of mineral-exporting countries is due mainly to differences in the endowment with complementary factors. Thus the lack of human capital was probably the decisive developmental bottleneck in the African countries. Both the rate of literacy and the extent of school enrolment lag behind the average for the

<sup>14</sup> Togo records a marginal capital productivity over the entire period of just over 10 %.

<sup>15</sup> The example of Peru showed a marginal capital productivity of 25 % for the seventies, estimated using a neo-classical production function; this certainly stands up to comparison with the international capital market interest rate. Cf. Susanne Schattner: Peru – Wachstum und Auslandsverschuldung (Peru – Growth and Foreign Debts), in preparation.

<sup>16</sup> Cf. World Bank: World Development Report, op. cit., p. 73 f.

**Table 2**  
**Capital Productivity and Investment Ratio**

| Country <sup>2</sup> | Avg. investment ratio in % (1970-80) | Marginal Productivity of Capital <sup>1</sup> in % (Sliding Average over 3 Years) |      |      |      |      |      |      |      |                        |
|----------------------|--------------------------------------|-----------------------------------------------------------------------------------|------|------|------|------|------|------|------|------------------------|
|                      |                                      | 1972                                                                              | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1970-1980 <sup>a</sup> |
| Mauretania           | 33.0                                 | n.a.                                                                              | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 5.5 <sup>b</sup>       |
| Zambia               | 32.2                                 | 6.9                                                                               | 7.9  | 5.3  | 4.2  | 3.1  | neg. | neg. | n.a. | 2.2                    |
| Zaire                | 29.1                                 | 9.1                                                                               | 13.5 | neg. | neg. | neg. | neg. | n.a. | n.a. | neg.                   |
| Togo                 | 29.1                                 | n.a.                                                                              | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 12.3 <sup>b</sup>      |
| Liberia              | 27.3                                 | 1.5                                                                               | 1.2  | neg. | 1.1  | 6.6  | 6.9  | neg. | neg. | 4.4                    |
| Guyana               | 26.9                                 | neg.                                                                              | 13.0 | 23.3 | 15.4 | n.a. | n.a. | n.a. | n.a. | 13.5                   |
| Jamaica              | 23.0                                 | 5.7                                                                               | neg. | neg. | neg. | neg. | neg. | neg. | neg. | neg.                   |
| Morocco              | 21.5                                 | 14.3                                                                              | 27.0 | 27.8 | 22.7 | 24.4 | 13.3 | n.a. | n.a. | 24.4                   |
| Bolivia              | 20.4                                 | 23.8                                                                              | 23.3 | 20.8 | 20.4 | 17.2 | 10.4 | 8.2  | n.a. | 21.7                   |
| Peru                 | 16.0                                 | 43.5                                                                              | 30.3 | 21.3 | 12.0 | 3.2  | neg. | 4.1  | 15.6 | 17.5                   |
| Sierra Leone         | 13.7                                 | n.a.                                                                              | 18.5 | 18.2 | neg. | neg. | 4.0  | n.a. | n.a. | 8.8                    |
| Chile                | 13.0                                 | neg.                                                                              | 5.1  | neg. | neg. | 47.6 | 90.9 | 55.6 | n.a. | 19.6                   |

<sup>1</sup> Real growth of gross domestic product/sum total of real gross investments. Time lag between investment and growth: one year. The year in the table is always the middle year for the GDP figures.

<sup>2</sup> Data for Guinea not available.

<sup>a</sup> Real growth of GDP 1971-1980/sum total of real gross investments during 1970-1979.

<sup>b</sup> Average growth rate of GDP (1970-1979)/investment ratio (1970-1979).

n.a. = not available.

neg. = negative.

Source: Calculated from IMF: International Financial Statistics Yearbook 1981, Washington 1981.

Data base deflated to 1975 prices. Growth rates of gross domestic product for Togo and Mauretania from World Bank: World Development Report 1981, Washington 1981.

countries in the income group concerned. The limit to absorptive capacity is of course reached particularly quickly wherever easy access to foreign capital provides funds for the creation of large-scale projects for whose output there is as yet no demand and/or for whose maintenance sufficiently qualified labour is not available. Zaire provides several instances of such over-dimensioned projects, e. g. the Inga Dam, which can only be linked to the main centre of demand for electricity, the mining region, by a 1,800 km high-voltage transmission line.

Moreover, due to fluctuations in demand, efficiency of capital input in the mining sector was not always ensured in the seventies. Vast capacities in the iron ore mines of Mauretania and Liberia lay unused for a time when the recession in the industrialised countries, following the oil price crisis, limited sales. Sierra Leone had to cease iron ore mining in 1975 because production had become unprofitable with the progressive exhaustion of the reserves. Even demand for copper did not in the long term match up to the expectations placed in it as recently as the boom year 1974. The copper exporting countries Zaire, Peru, Zambia and Chile at times had to accept considerable terms-of-trade deterioration.

This unfavourable development in the mining sector could only have remained without effect on debt-servicing capacity had other sectors been able to compensate. In this connection one must first of all look at the situation in agriculture. The mineral-exporting countries, like the countries of their group of reference, are predominantly agricultural. Yet the share of agriculture in the gross domestic product of the "minerals" is below the average for the other developing countries, partly because of the low agricultural potential (Mauretania) and partly because of low efficiency in the agricultural sector. At the same time the labour force in agriculture in the "minerals" is no less than in the group of reference. Evidently the mineral economies have succeeded less well than other developing countries in transferring the labour force from this sector to other areas of production. Agriculture in the mineral economies has not succeeded in recording growth. Especially in the less developed countries with a markedly dualistic economic structure investments are concentrated on the improvement of the infrastructure in the mining regions while the agricultural base is seriously neglected. Frequently, moreover, low producer prices provided disincentives – for instance in the agriculture of Zaire, which possesses an extensive agricultural potential – that gave rise to a retreat into subsistence economy.

Nor have the mineral economies in the past succeeded in building up a manufacturing industry. The level of industrialisation of these countries is low. This becomes particularly obvious in the group of low-income countries. Their manufacturing industries only achieved a 6 % share of the gross domestic product as against an average of 10 % for the group of reference. The mineral-exporting countries tend to jeopardise the efficient use of capital by the production structure of their manufacturing industry: inputs are mainly imported while domestic agricultural and mineral raw materials are neglected as a basis for further processing. The World Bank illustrates this by the example of Zambia<sup>17</sup>, the only African mineral-exporting country with a level of industrialisation worth mentioning. The industrialisation process of that country has been interrupted since the collapse of copper prices in 1975 because the imported goods needed for a full utilisation of available capacity could no longer be financed.

The mineral economies, moreover, tend towards a development policy which promotes and protects import-substitution industries. As a consequence of this policy capital-intensive industries have been built up which work inefficiently if favoured above other domestic sectors and protected against foreign competition for too long. The effects of such an inefficient policy, of course, can only be delayed. After a collapse in the price trend of export products they emerge into the open.

Peru is an eloquent example of the long-term effects of an excessive import-substitution policy. By means of increasing foreign trade controls, which eventually resulted in a ban on imports of goods that could also be manufactured domestically, an import-substitution industry was built up whose capacity, in view of the small domestic market, can only be fully utilised provided its products are also competitive in the world market. The protectionist foreign trade measures, however, prevent an adaptation to foreign competition. As the period of intensified controls coincided with a price rise in the copper market this did not become obvious until a price collapse rendered adaptive measures necessary.

Foreign borrowing brought about a situation in the mineral economies where erroneous decisions with regard to development strategy were not revised, or at least not in time. Their low level of development, together with an economic policy which either neglected or failed to ensure productive use of domestic resources other than minerals, resulted in the seventies, especially

<sup>17</sup> Cf. World Bank: Accelerated Development in Sub-Saharan Africa, Washington 1981, p. 29.

in the African mineral economies, in capital costs not being matched by adequate yields. Although the South American mineral economies and Morocco generally recorded a substantially higher efficiency, the declining tendency of capital productivity in these countries over the course of time suggests that their capacity for servicing their debts also diminished. The significance of such a development is enhanced when these countries use foreign capital for purposes of consumption.

### The Transformation Criterion

In point of fact the group of the mineral-exporting countries has already been suspected of not transforming foreign financial resources into investment but of using them for consumption<sup>18</sup>. Comparison with other countries in the same income group shows that mineral-rich countries have either already attained an above-average level of consumption or that their consumption rate has greatly increased between 1960 and 1979. The group of reference, on the other hand, reveals a long-term falling propensity to consume. Similar findings are provided by a World Bank study<sup>19</sup>

which provides a survey of the specific problems of the mineral-exporting countries: this group of countries over the period 1968 to 1976 exhibited a markedly lower marginal rate of saving than the non-mineral economies.

In order to go beyond a simple comparison of data an attempt was made to establish an empirically confirmed correlation between the inflow of foreign capital and the development of domestic savings<sup>20</sup>. It was possible to estimate savings as a function of gross domestic product and the balance on current account for ten of the mineral economies, based on data for 1970 to 1980 (cf. Table 3). They show a negative correlation between inflow of foreign capital (= current account deficit) and domestic savings, although no significant results emerge for three of the countries. The estimated results suggest that mineral-exporting countries do in fact lower their domestic savings when foreign credits are taken up on an increasing scale. The findings of such empirical estimates should of course be interpreted with caution as they do not permit of an unambiguous statement concerning the direction of a causal relationship<sup>21</sup>.

<sup>18</sup> Cf. Peter Nunnenkamp: Ausmaß, Ursachen und Lösungsansätze der internationalen Verschuldungssituation von Entwicklungsländern (Extent, Causes and Approaches to a Solution of the International Debt Situation of Developing Countries), in: Konjunkturpolitik, Vol. 26, 1980, No. 6, p. 374; Helen Hughes: Debt and Development: The Role of Foreign Capital in Economic Growth, in: World Development, Vol. 7, 1979, No. 2, p. 107.

<sup>19</sup> Cf. Gobind Nankani, op. cit., p. 19 ff.

<sup>20</sup> Cf. K. B. Griffin, J. L. Enos: Foreign Assistance: Objectives and Consequences, in: Economic Development and Cultural Change, Vol. 18, 1970, p. 313 ff.; Rainer Erbe: Foreign Indebtedness and Economic Growth: The Philippines, in: INTERECONOMICS, 3/1982, p. 125 ff.

<sup>21</sup> Cf. C. F. Papanek: The Effect of Aid and other Resource Transfers on Savings and Growth in Less Developed Countries, in: The Economic Journal, Vol. 82, 1972, No. 327.

**Table 3**  
**Savings Function for 10 Mineral-Exporting Countries**

| Country      | Constant   | Coefficient of regression <sup>1</sup> |                             | R <sup>2</sup> | D.W.  |
|--------------|------------|----------------------------------------|-----------------------------|----------------|-------|
|              |            | Gross domestic product <sup>2</sup>    | Capital inflow <sup>3</sup> |                |       |
| Bolivia      | -3.460     | 0.256<br>(6.679)                       | -0.550<br>(4.331)           | 0.865          | 1.836 |
| Chile        | -17.840    | 0.494<br>(3.820)                       | -0.434<br>(1.094)           | 0.689          | 1.166 |
| Guyana       | -617.836   | 0.831<br>(7.846)                       | -0.789<br>(9.600)           | 0.964          | 2.113 |
| Jamaica      | -1,529.400 | 0.792<br>(2.711)                       | -0.383<br>(0.613)           | 0.512          | 0.990 |
| Liberia      | 157.055    | -0.004<br>(0.025)                      | -0.070<br>(0.290)           | 0.010          | 2.291 |
| Morocco      | -6.754     | 0.380<br>(3.594)                       | -0.551<br>(2.743)           | 0.684          | 1.155 |
| Peru         | -35.445    | 0.222<br>(4.945)                       | -0.736<br>(7.941)           | 0.900          | 1.170 |
| Sierra Leone | -118.028   | 0.355<br>(0.987)                       | -1.064<br>(3.362)           | 0.799          | 1.874 |
| Zaire        | -434.170   | 0.465<br>(1.402)                       | -0.664<br>(3.128)           | 0.662          | 1.066 |
| Zambia       | -121.073   | 0.407<br>(1.296)                       | -0.636<br>(3.040)           | 0.573          | 1.816 |

<sup>1</sup> The figures in brackets are T-values.

<sup>2</sup> Gross domestic product at constant 1975 prices.

<sup>3</sup> Current account balance at constant 1975 prices.

Source: Calculated from: International Monetary Fund: International Financial Statistics Yearbook 1981, Washington 1981.

The causes of the use of foreign finance for consumption may be found in part in movements in public finances which, in this group of countries, greatly depend on the profit situation in the mining industry<sup>22</sup>. Periods of price rises are accompanied by an increase in government revenue, in the train of which increased consumption expenditure gives rise to expectations which, during periods of depressed prices, can be curtailed only at the price of political difficulties. To prevent a reduction in consumption expenditure foreign capital is borrowed to finance the gap between current revenue and current expenditure. In consequence the government's savings decline. Such a tendency was observed during the past decade in Morocco<sup>23</sup>, Bolivia, Peru and Jamaica<sup>24</sup>. The Peruvian government, for instance, even after a decline in revenue due to falling export prices, still believed it could afford to subsidize the prices of wheat and petrol as well as support inefficiently managed nationalised enterprises from budgetary funds.

Neither do private individuals seem to cut back their expectations when terms-of-trade losses occur after a boom period. The high rates of inflation of some mineral-exporting countries support such an assumption. If, moreover, the rates of interest in the domestic capital market are kept on a low level by administrative measures instead of being adjusted to the higher rates of inflation, the private individual's willingness to save also diminishes.

The estimated findings of the savings function can thus be plausibly explained. The infringements of the transformation criterion round off our judgement of the debt-servicing capacity of the mineral economies. The South American countries and Morocco have likewise in the seventies failed to meet the prerequisites of a successful growth-cum-debt process.

### The Transfer Criterion

The management of economic policy and its impact on the debt-servicing capacity of course also emerge clearly in an examination of the transfer criterion. Inadequate implementation of this last condition for a successful growth-cum-debt process may admittedly be deduced simply from an infringement of the efficiency

criterion. The poorly diversified pattern of production in the mineral countries is ultimately reflected in a marked concentration of their exports. The share of minerals in export earnings actually increased from an average of 67 % (1960) to 72 % (1976)<sup>25</sup>. Thus the development of prices in the world primary commodity markets greatly determined the foreign trade position of the mineral countries. Following a boom in copper in 1973/74 and in phosphates and iron ore in 1975, prices very rapidly reverted to their starting level, and stagnated or even dropped during the years up to 1978. Whereas all the countries predominantly exporting minerals greatly increased their dollar export figures from 1970 to 1974, growth rates of export earnings during the four subsequent years noticeably declined.

The economies of the mineral-exporting countries – considering the boom during the first half of the decade – were not prepared for such a development. Their import substitution policy had not resulted in foreign exchange savings but, on the contrary, their demand for imported inputs had actually increased. The rise in oil prices similarly left its mark on their import bill, and neglect of their agriculture had, furthermore, made them increasingly dependent on imports of foodstuffs<sup>26</sup>.

In such a foreign trade situation, the countries naturally find it difficult to cut back their imports even further in order to generate a balance-of-trade surplus to cover the costs of the credits raised partly during the boom period and partly during the years of excess import demand following the boom period. The mineral economies' long-run deficits on the balance on current account show that they were not in a position to meet the transfer criterion.

It is clear that the supposedly greater capacity of the mineral economies to service their debts has led to a delay in measures of adjustment and to a situation favouring undesirable developments. This does not of course mean that mineral-exporting countries are *per se* not creditworthy. Nevertheless, both creditors and debtors must learn their lessons from the past. In future those countries must utilise all domestic resources on a sufficient scale: agricultural, human and financial resources. Creditors can only be advised to meditate on the words of the Vice-President of the American Export-Import Bank and keep in sight not only the development of foreign trade or indeed only the prospects of export production, but to take into consideration an analysis of economic policy and economic structure as a whole if they wish to avoid any future surprises with regard to their outstanding debts.

<sup>22</sup> The proportion of mining sector taxes in government revenue 1971-1974 exceeds 25 % for Bolivia, Jamaica, Liberia, Zaire and Zambia. Chilean government revenue depended on the mining sector to 10-24.9 %. Cf. Malcolm Gilles: *Taxation and Mining*, Cambridge 1978, Table 1.1.

<sup>23</sup> Cf. World Bank: *World Development Report 1981*, p. 74.

<sup>24</sup> Cf. International Monetary Fund: *Government Statistics Yearbook*, Washington 1980.

<sup>25</sup> Cf. Gobind Nankani, *op. cit.*, p. 53.

<sup>26</sup> *Ibid.*, p. 46.